REPUBLIC OF SOUTH AFRICA

CARBON TAX BILL

(As introduced in the National Assembly (proposed section 77))
(The English text is the official text of the Bill)

(MINISTER OF FINANCE)

[B 46—2018]

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BILL

To provide for the imposition of a tax on the carbon dioxide (CO_2) equivalent of greenhouse gas emissions; and to provide for matters connected therewith.

PREAMBLE

SINCE the causality of the increasing of anthropogenic greenhouse gas emissions in the atmosphere and the global climate change has been scientifically confirmed;

AND SINCE it has consequently become necessary to manage the inevitable climate change impact through interventions that build and sustain South Africa's social, economic and environmental resilience and emergency response capacity;

AND SINCE it has also become necessary to make a contribution to the global effort to stabilise greenhouse gas concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner;

AND SINCE the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment (the polluter pays principle);

AND SINCE government is desirous to utilise a package of measures in an effort to address the challenges posed by climate change;

AND SINCE this package of measures will be achieved by the deployment of a range of measures to support the system of desired emissions reduction outcomes, including the appropriate pricing of carbon and economic incentives, as well as the use of emissions offsets;

AND SINCE government is of the view that imposing a tax on greenhouse gas emissions and concomitant measures such as providing tax incentives for rewarding the efficient use of energy will provide appropriate price signals to help nudge the economy towards a more sustainable growth path,

BE IT THEREFORE ENACTED by the Parliament of the Republic of South Africa, as follows:—

ARRANGEMENT OF SECTIONS

Sections

Part I

Definitions and general provisions relating to imposition of carbon tax

Definitions

1. In this Act, unless the context otherwise indicates—

"allowance" means any amount allowed to be taken into account in terms of Part II, subject to section 14, for the purposes of determining the amount of carbon tax payable;

"carbon budget" means an amount of greenhouse gas emissions permitted, against which direct emissions arising from the operations of a person during a defined time period will be accounted for;

"carbon dioxide (CO_2) equivalent" means the concentration of carbon dioxide that would cause the same amount of radiative forcing (the difference of sunlight absorbed by the Earth and energy radiated back to space) as a given mixture of carbon dioxide and other greenhouse gases;

"carbon tax" means a tax on the carbon dioxide (CO_2) equivalent of greenhouse gas emissions imposed in terms of section 2;

"combustion" means the exothermic reaction of a fuel with oxygen;

"Commissioner" means the Commissioner for the South African Revenue Service;

"emission factor" means the average emission rate of a given greenhouse gas for a given source, relative to the activity data of a source stream assuming complete oxidation for combustion and complete conversion for all other chemical reactions;

"emissions" means—

(a) the release of greenhouse gases or their precursors; or

(b) the release of greenhouse gases and their precursors,

into the atmosphere, over a specified area and period of time;

"emissions intensity" means an indicator of the result of the measurement of the quantity of greenhouse gas emissions in relation to an activity;

"emissions intensity benchmark" means the result of the measurement in respect of an activity that creates greenhouse gas emissions—

(a) expressed as a predetermined value of the quantity of specified greenhouse gas emissions;

(b) in relation to an activity that is differentiated from other activities by means of a product, a type of fuel or a technology; and

(c) compared against the quantity of greenhouse gas emissions,

in relation to an identical activity undertaken by another person;

"fugitive emissions" means emissions that are released into the atmosphere by any other means than through an intentional release through stack or vent including extraction, processing, delivery and burning for energy production of fossil fuels, including leaks from industrial plant and pipelines;

"greenhouse gas" means gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation, and includes carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6);

"industrial process" means a manufacturing process that chemically or physically transforms materials;

"IPCC" means the Intergovernmental Panel on Climate Change established for the purposes of providing internationally co-ordinated scientific assessments of the magnitude, timing and potential environmental and socio-economic impact of climate change by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) and endorsed by the United Nations by General Assembly Resolution 43/53 made at the 70th plenary meeting on 6 December 1988;

"IPCC code" means the source code in respect of an activity resulting in the emission of a greenhouse gas as stipulated in the ''Guidelines for National Greenhouse Gas Inventories'' (2006) issued by the IPCC;

"Minister" means the Minister of Finance;

"person" includes—

(a) a partnership;

(b) a trust;

(c) a municipal entity as defined in section 1 of the Local Government: Municipal Systems, 2000 (Act No. 32 of 2000); and

(d) a public entity listed in Schedules 2, 3A, 3B, 3C and 3D to the Public Finance Management Act, 1999 (Act No. 1 of 1999);

"taxpayer" means a person liable for the carbon tax in terms of section 3; and

"tax period" means a period in respect of which tax is payable as prescribed under section 16.

Imposition of carbon tax

2. There must be levied and collected for the benefit of the National Revenue Fund, a tax to be known as the carbon tax.

Persons subject to tax

3. A person is—

(a) a taxpayer for the purposes of this Act; and

(b) liable to pay an amount of carbon tax calculated as contemplated in section 6 in respect of a tax period as specified in section 16,

if that person conducts an activity in the Republic resulting in greenhouse gas emissions above the threshold determined by matching the activity listed in the column ''Activity/ Sector'' in Schedule 2 with the number in the corresponding line of the column ''Threshold'' of that table.

Tax base

4. (1) The carbon tax must be levied in respect of the sum of the greenhouse gas emissions of a taxpayer in respect of a tax period expressed as the carbon dioxide equivalent of those greenhouse gas emissions resulting from fuel combustion and industrial processes, and fugitive emissions in accordance with the emissions factors determined in accordance with a reporting methodology approved by the Department of Environmental Affairs.

(2) If a reporting methodology approved by the Department of Environmental Affairs for the purposes of determining emission factors does not exist in respect of the calculation of greenhouse gas emissions resulting from fuel combustion, and industrial processes, and fugitive emissions the carbon tax must be levied in respect of the sum of the greenhouse gas emissions of a taxpayer in respect of a tax period expressed as the carbon dioxide equivalent of those greenhouse gas emissions resulting from—

(a) fuel combustion in respect of that tax period that is a number constituted by the sum of the respective numbers determined for each type of fuel in respect of which a greenhouse gas is emitted in respect of that tax period which respective numbers must be determined in accordance with the formula:

$$\mathbf{E = (A \times B)}$$

in which formula—

(i) **"E"** represents the number to be determined;

(ii) **"A"** represents the mass of any one type of the fuel expressed in tonne that is the source of the greenhouse gas emission, other than any fuel utilised for the purposes of international aviation and maritime transport;

(iii) **"B"** represents the greenhouse gas emission factor in carbon dioxide equivalent per tonne that must be determined in accordance with the formula:

$$\mathbf{X = \{(C \times 1) + (M \times 23) + (N \times 296)\} \times D}$$

in which formula—

(aa) **"X"** represents the number to be determined;

(bb) **"C"** represents the carbon dioxide emissions of a fuel type determined by matching the fuel type listed in the column ''fuel type'' in Table 1 of Schedule 1 with the number in the corresponding line of the column ''CO_2 ($KGCO_2$/TJ)'' of that table;

(cc) **"M"** represents the methane emissions of a fuel type determined by matching the fuel type listed in the column ''fuel type'' in Table 1 of Schedule 1 with the number in the corresponding line of the column ''CH_4 ($KGCH_4$/TJ)'' of that table';

(dd) **"N"** represents the Nitrous Oxide emissions of a fuel type determined

by matching the fuel type listed in the column ''fuel type'' in Table 1 of Schedule 1 with the number in the corresponding line of the column ''N_2O (KGN_2O/TJ)'' of that table; and

(ee) **"D"** represents the default calorific value (Terra Joule per tonne) of a fuel type determined by matching the fuel type listed in the column ''fuel type'' in Table 1 of Schedule 1 with the number in the corresponding line of the column ''DEFAULT CALORIFIC VALUE (TJ/TONNE)'' of that table;

(b) fugitive emissions that is a number constituted by the sum of the respective numbers determined for each type of commodity, fuel or technology in respect of which the greenhouse gas is emitted in respect of a tax period which respective numbers must be determined in accordance with the formula:

F= (N x Q)

in which formula—

(i) **"F"** represents the number to be determined;

(ii) **"N"** represents the mass expressed in tonne in the case of solid fuels or the volume of each type of fuel expressed in cubic metres in the case of fuels other than solid fuels, in respect of the greenhouse gas emission; and

(iii) **"Q"** represents the greenhouse gas emission factor in carbon dioxide equivalent per tonne or cubic metres that must be determined in accordance with the formula:

X = (C x 1) + (M x 23) + (N x 296)

in which formula—

(aa) **"X"** represents the number to be determined;

(bb) **"C"** represents the carbon dioxide emissions of a fuel type determined by matching the fuel type listed in the column ''fuel type'' in Table 2 of Schedule 1 with the number in the corresponding line of the column ''CO_2'' of that table;

(cc) **"M"** represents the methane emissions of a fuel type determined by matching the fuel type listed in the column ''fuel type'' in Table 2 of Schedule 1 with the number in the corresponding line of the column ''CH_4'' of that table;

(dd) **"N"** represents the Nitrous Oxide emissions of a fuel type determined by matching the fuel type listed in the column ''fuel type'' in Table 2 of Schedule 1 with the number in the corresponding line of the column ''N_2O'' of that table; and

(c) industrial process in respect of a tax period that is a number constituted by the sum of the respective numbers determined for each type of commodity, fuel or technology in respect of which the greenhouse gas is emitted in respect of that tax period which respective numbers must be determined in accordance with the formula:

P= (G x H)

in which formula—

(i) **"P"** represents the amount to be determined that must not be less than zero;

(ii) **"G"** represents the mass of each raw material used or product produced expressed in tonne in respect of which the greenhouse gas is emitted in respect of that tax period; and

(iii) **"H"** represents the greenhouse gas emission factor in carbon dioxide emissions equivalent per tonne for each raw material used or product produced that must be determined in accordance with the formula:

X = (C x 1) + (M x 23) + (N x 296) + (H x 11 900) + (T x 5 700) + (S x 22 200)

in which formula—

(aa) **"X"** represents the number to be determined;

(bb) **"C"** represents the carbon dioxide emissions of a raw material or product determined by matching the fuel type listed in the column ''SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT'' in Table 3 of Schedule 1 with the number in the corresponding line of the column ''**CO_2/tonne product**'' of that table;

(cc) **"M"** represents the methane emissions of a raw material or product determined by matching the fuel type listed in the column ''SOURCE

CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT'' in Table 3 of Schedule 1 with the number in the corresponding line of the column ''**CH_4/tonne product**'' of that table;

(dd) **"N"** represents the Nitrous Oxide emissions of a raw material or product determined by matching the fuel type listed in the column ''SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT'' in Table 3 of Schedule 1 with the number in the corresponding line of the column ''**N_2O/ tonne product**'' of that table;

(ee) **"H"** represents the Hexafluoroethane (C_2F_6) emissions of a raw material or product determined by matching the fuel type listed in the column ''SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT'' in Table 3 of Schedule 1 with the number in the corresponding line of the column ''**C_2F_6/tonne product**'' of that table;

(ff) **"T"** represents the carbon tetrafluoride (CF_4) emissions of a raw material or product determined by matching the fuel type listed in the column ''SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT'' in Table 3 of Schedule 1 with the number in the corresponding line of the column ''**CF_4/tonne product**'' of that table; and

(gg) **"S"** represents the Sulphur hexafluoride (SF_6) emissions of a raw material or product determined by matching the fuel type listed in the column ''SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT'' in Table 3 of Schedule 1 with the number in the corresponding line of the column ''**SF_6/tonne product**'' of that table.

Rate of tax

5. (1) The rate of the carbon tax on greenhouse gas emissions must, subject to subsections (2) and (3), be imposed at an amount of R120 per ton carbon dioxide equivalent of the greenhouse gas emissions of a taxpayer.

(2) The rate of tax specified in subsection (1) must be increased by the amount of the consumer price inflation plus 2 per cent for the preceding tax period as determined by Statistics South Africa per year until 31 December 2022.

(3) The rate of tax must be increased after 31 December 2022 by the amount of the consumer price inflation for the preceding tax year as determined by Statistics South Africa.

Calculation of amount of tax payable

6. (1) Subject to subsection (2), the amount of tax payable by a taxpayer in respect of a tax period must be calculated in accordance with the formula:

$$X = <\{[(E - S) \times (1 - C)] - [D \times (1 - M)]\} + \{P \times (1 - J)\} + \{F \times (1 - K)\}> \times R$$

in which formula—

(a) **"X"** represents the amount to be determined that must not be less than zero;

(b) **"E"** represents the number in respect of the total fuel combustion related greenhouse gas emissions of the taxpayer in respect of that tax period expressed as a carbon dioxide equivalent determined in terms of section 4(2)*(a)*;

(c) **"S"** represents the number in respect of greenhouse gas emissions, expressed in terms of carbon dioxide equivalent that were sequestrated in respect of that tax period as verified and certified by the Department of Environmental Affairs;

(d) **"C"** represents a number equal to the sum of the percentages of allowances determined under sections 7, 10, 11, 12, and 13 in respect of that tax period subject to section 14;

(e) **"D"** represents the number in respect of the petrol and diesel related greenhouse gas emissions of that taxpayer in respect of that tax period expressed as a carbon dioxide equivalent, determined in terms of section 4(2)*(a)*;

(f) **"M"** represents a number equal to the sum of the percentages of the allowances determined under sections 7, 12 and 13 in respect of that tax period, subject to section 14;

(g) **"P"** represents the number in respect of the total industrial process related greenhouse gas emissions of the taxpayer in respect of that tax period expressed as a carbon dioxide equivalent determined in terms of section 4(2)*(c)*;

(h) **"J"** represents a number equal to the sum of the percentages of the allowances determined under sections 8, 10, 11, 12 and 13 in respect of that tax period, subject to section 14;

(i) **"F"** represents the number in respect of the total fugitive greenhouse gas emissions of the taxpayer in respect of that tax period expressed as a carbon dioxide equivalent determined in terms of section 4(2)*(b)*; and

(j) **"K"** represents the sum of the percentages of the allowances determined in terms of sections 7, 9, 10, 11, 12 and 13 in respect of that tax period, subject to section 14:

(k) **"R"** represents the rate of tax prescribed under section 5:

Provided that where the number in respect of the determination of the expression ''**(E-S)**'' in the formula is less than zero, that number must be deemed to be zero.

(2) The amount of tax payable by a taxpayer in respect of the generation of electricity from fossil fuels in respect of a tax period must be calculated in accordance with the formula:

X = A - B - C

in which formula—

(a) **"X"** represents the amount to be determined that must not be less than zero;

(b) **"A"** represents the amount of tax payable in respect of a tax period determined in terms of subsection (1);

(c) **"B"** represents the renewable energy premium in respect of a tax period, from the commencement of the tax period until 31 December 2022, constituted by an amount expressed in Rand determined by the Minister by notice in the *Gazette*; and

(d) ''**C"** represents an amount equal to the environmental levy contemplated in respect of electricity generated in the Republic in Section B of Part 3 of Schedule 1 to the Customs and Excise Act, 1964 (Act No. 91 of 1964), paid in respect of a tax year, until 31 December 2022.

(3) For the purposes of this section **"sequestrate"** means the process of storing a greenhouse gas or increasing the carbon content of a carbon reservoir other than the atmosphere.

Part II

Allowances

Allowance for fossil fuel combustion

7. (1) A taxpayer that conducts an activity in respect of fuel combustion emissions that is listed in Schedule 2 in the column ''Activity/Sector'' must receive an allowance in respect of those emissions, determined in terms of subsection (2).

(2) The percentage of the allowance referred to in subsection (1) must be calculated by matching the line in which the activity is contained in the column ''Activity/Sector ''with the corresponding line in the column ''Basic tax-free allowance for fossil fuel combustion emissions %'' in Schedule 2 of the total percentage of greenhouse gas emissions in respect of a tax period in respect of that activity.

Allowance for industrial process emissions

8. (1) A taxpayer that conducts an activity in respect of industrial process emissions that is listed in Schedule 2 in the column ''Activity/Sector'' must receive an allowance in respect of those emissions, determined in terms of subsection (2).

(2) The percentage of the allowance referred to in subsection (1) must be calculated by matching the line in which the activity is contained in the column ''Activity/Sector'' with the corresponding line in the column ''Basic tax-free allowance for process emissions %'' in Schedule 2 of the total percentage of greenhouse gas emissions in respect of a tax period in respect of that activity.

Allowance in respect of fugitive emissions

9. (1) A taxpayer that conducts an activity that is listed in Schedule 2 in the column ''Activity/Sector'' must receive an allowance in respect of fugitive emissions in a percentage determined in terms of subsection (2).

(2) The allowance referred to in subsection (1) must be determined by matching the line in which the activity is contained in the column ''Activity/Sector'' with the corresponding line in the column ''Fugitive emissions allowance %'' in Schedule 2 in respect of the total percentage of greenhouse gas emissions in respect of the tax period in respect of that activity.

Trade exposure allowance

10. A taxpayer that is liable for the carbon tax in respect of greenhouse gas emissions must receive an allowance up to a maximum of ten per cent in respect of trade exposure as measured by value of exports plus imports divided by the total production by sector or subsector that must be determined in a manner prescribed by the Minister by regulation.

Performance allowance

11. (1) A taxpayer that has implemented measures to reduce the greenhouse gas emissions of that taxpayer in respect of a tax period must receive an allowance in respect of that tax period not exceeding five per cent of the total greenhouse gas emissions of that taxpayer during that tax period determined in accordance with the formula:

$$Z = (A / B - C) \times D$$

in which formula—

(a) **"Z"** represents the percentage to be determined that must not be less than zero;

(b) **"A"** represents—

(i) the sector or sub-sector greenhouse gas emissions intensity benchmark as prescribed by the Minister; or

(ii) where no value is prescribed as required by subparagraph (i), the number zero;

(c) **"B"** represents the measured and verified greenhouse gas emissions intensity of a taxpayer in respect of a tax period;

(d) **"C"** represents the number one; and

(e) **"D"** represents the number 100.

(2) For the purposes of this section **"measures"** include action taken to reduce greenhouse gas emissions in respect of a tax period.

Carbon budget allowance

12. (1) Subject to subsection (2), a taxpayer that conducts an activity that is listed in Schedule 2 in the column ''Activity/Sector'', and participates in the carbon budget system during or before the tax period, must receive an additional allowance of 5 per cent of the total greenhouse gas emissions in respect of a tax period.

(2) A taxpayer must only receive the allowance as contemplated in subsection (1) if the Department of Environmental Affairs confirms in writing that that taxpayer is participating in the carbon budget system as referred to in subsection (1).

Offset allowance

13. (1) Subject to subsection (2), a taxpayer must reduce the amount in respect of the carbon tax for which the taxpayer is liable in respect of a tax period by utilising carbon offsets as prescribed by the Minister.

(2) The reduction of the liability for the carbon tax allowed in terms of subsection (1) must not exceed so much of the percentage of the total greenhouse gas emissions of a taxpayer in respect of a tax period as is determined by matching the line in the column ''Activity/Sector'' with the percentage in the corresponding line of the column ''Offsets allowance %'' in Schedule 2.

Part III

Limitation of allowances

Limitation of sum of allowances

14. A taxpayer must only receive the sum of the allowances contemplated in Part II in respect of a tax period to the extent that the sum of those allowances does not exceed 95 per cent of the total greenhouse gas emissions of that taxpayer in respect of that tax period as determined in terms of the column "Maximum total allowances %" in Schedule 2.

Part IV

Administration, tax period and payment of tax

Administration

15. (1) The Commissioner must administer the provisions of this Act as if the carbon tax were an environmental levy as contemplated in section 54A of the Customs and Excise Act, 1964 (Act No. 91 of 1964), that must be collected and paid in terms of the provisions of that Act.

(2) For the purposes of subsection (1), administrative actions, requirements and procedures for purposes of submission and verification of accounts, collection and payment of the carbon tax as an environmental levy or the performance of any duty, power or obligation or the exercise of any right in terms of this Act are, to the extent not regulated in this Act, regulated by the Customs and Excise Act, 1964.

Tax period

16. (1) A taxpayer must pay the carbon tax for every tax period.

(2) A tax period in relation to a taxpayer is—

(a) from a date determined by the Minister in the *Gazette* ending on 31 December of the year in which that date is determined; and

(b) subsequent to the period contemplated in paragraph *(a)*, the period commencing on 1 January of each year and ending on 31 December of that year.

Payment of tax

17. A taxpayer must submit yearly environmental levy accounts and payments as prescribed by rule in terms of the Customs and Excise Act, 1964 (Act No. 91 of 1964), for every tax period.

Part V

Miscellaneous

Reporting

18. Despite Chapter 6 of the Tax Administration Act, the Commissioner must annually submit to the Minister a report, in the form and manner that the Minister may prescribe, within six months from the date of submission of environmental levy accounts and payments contemplated in section 17 advising the Minister in respect of that tax period of—

(a) the total amount of greenhouse gas emissions reported in respect of which taxpayers are liable for the carbon tax; and

(b) the amount of carbon tax collected.

Regulations

19. The Minister must make regulations in respect of—

(a) the sector or sub-sector greenhouse gas emissions intensity benchmark for the purposes of symbol **"A"** in section 11(1);

(b) the manner of determining the amount of the trade exposure allowance contemplated in section 10; and

(c) carbon offsets contemplated in section 13 regarding—

(i) the projects or activities in respect of which an offset is generated;

(ii) the limitation on the carbon offset allowance;

(iii) offset duration periods;

(iv) the institution, board or body that must administer the offset allowance;

(v) the powers and responsibilities of the institution, board or body contemplated in subparagraph (iv);

(iv) the procedure that must be followed in claiming the offset allowance;

(vi) the records that must be kept in respect of administering the offset allowance; and

(vii) any other matter necessary for the regulation of the utilisation of the carbon offsets.

Amendment of laws

20. The Customs and Excise Act, 1964 (Act No. 91 of 1964), is hereby amended to the extent set out in Schedule 3.

Short title and commencement

21. This Act is called the Carbon Tax Act, 2018, and comes into operation on 1 June 2019.

SCHEDULE 1

Table 1

Fuel Combustion Emission Factors

STATIONARY SOURCE CATEGORY

FUEL TYPE	CO_2 ($KGCO_2$/TJ)	CH_4 ($KGCH_4$/TJ)	N_2O (KGN_2O/TJ)	DEFAULT CALORIFIC VALUE (TJ/TONNE)
ANTHRACITE	98 300	1	1.5	0.0267
AVIATION GASOLINE	70 000	3	0.6	0.0443
BIODIESEL	0	3	0.6	0.027
BIOGASOLINE	0	3	0.6	0.027
BITUMEN	80 700	3	0.6	0.0402
BLAST FURNACE GAS	260 000	1	0.1	0.00247
DIESEL	74 100	3	0.6	0.043
BROWN COAL BRIQUETTES	97 500	1	1.5	0.0207
CHARCOAL	0	200	4	0.0295
COAL TAR	80 700	1	1.5	0.028
COKE OVEN COKE AND LIGNITE COKE	107 000	1	1.5	0.0282
COKE OVEN GAS	44 400	1	0.1	0.0387
COKING COAL	94 600	1	1.5	0.0282
CRUDE OIL	73 300	3	0.6	0.0438
DIESEL	74 100	3	0.6	0.0381
ETHANE	61 600	1	0.1	0.0464
GAS COKE	107 000	1	0.1	0.0173
GAS WORKS GAS	44 400	1	0.1	0.0387
INDUSTRIAL WASTES	143 000	30	4	N/A
JET GASOLINE	70 000	3	0.6	0.0443
JET KEROSENE	71 500	3	0.6	0.0441
LANDFILL GAS	0	1	0.1	0.0504
LIGNITE	101 000	1	1.5	0.0119
LIQUEFIED PETROLEUM GASES	63 100	1	0.1	0.0473
LUBRICANTS	73 300	3	0.6	0.0402
MUNICIPAL WASTES (BIOMASS FRACTION)	0	30	4	0.0116
MUNICIPAL WASTES (NON BIOMASS FRACTION)	91 700	30	4	0.01
NAPHTHA	73 700	3	0.6	0.0445
NATURAL GAS	56 100	1	0.1	0.048
NATURAL GAS LIQUIDS	64 200	3	0.6	0.041
OIL SHALE AND TAR SANDS	107 000	1	1.5	0.0089
ORIMULSION	77 000	3	0.6	0.0275
OTHER BIOGAS	0	1	0.1	0.0504

FUEL TYPE	**CO_2 ($KGCO_2$/ TJ)**	**CH_4 ($KGCH_4$/ TJ)**	**N_2O (KGN_2O/ TJ)**	**DEFAULT CALORIFIC VALUE (TJ/TONNE)**
OTHER BITUMINOUS COAL	94 600	1	1.5	0.0192
OTHER KEROSENE	71 900	3	0.6	0.037
OTHER LIQUID BIOFUELS	0	3	0.6	0.0274
OTHER PETROLEUM PRODUCTS	73 300	3	0.6	0.0402
OTHER PRIMARY SOLID BIOMASS	0	30	4	0.0116
OXYGEN STEEL FURNACE GAS	182 000	1	0.1	0.00706
PARAFFIN	71 900	3	0.6	0.0438
PARAFFIN WAXES	73 300	3	0.6	0.0402
PATENT FUEL	97 500	1	1.5	0.0207
PEAT	0	1	1.5	0.00976
PETROL	69 300	3	0.6	0.0443
PETROLEUM COKE	97 500	3	0.6	0.0325
REFINERY FEEDSTOCK	73 300	3	0.6	0.043
REFINERY GAS	57 600	1	0.1	0.0495
RESIDUAL FUEL OIL (HEAVY FUEL OIL)	77 400	3	0.6	0.0404
SHALE OIL	73 300	3	0.6	0.0381
SLUDGE GAS	0	1	0.1	0.0504
SUB-BITUMINOUS COAL	96 100	1	1.5	0.0192
SULPHITE LYES (BLACK LIQUOR)	95 300	3	2	0.0118
WASTE OILS	73 300	30	4	0.0402
WHITE SPIRIT AND SBP	73 300	3	0.6	0.0402
WOOD/WOOD WASTE	0	30	4	0.0156

NON-STATIONARY / MOBILE SOURCE CATEGORY ACTIVITY

FUEL TYPE	**CO_2 ($KGCO_2$/ TJ)**	**CH_4 ($KGCH_4$/ TJ)**	**N_2O (KGN_2O/ TJ)**	**DEFAULT CALORIFIC VALUE (TJ/TONNE)**
AVIATION GASOLINE	70 000	0.5	2	0.0443
COMPRESSED NATURAL GAS	56 100	92	3	N/A
DIESEL	74 100	4.15	28.6	0.0381
DIESEL — (OCEAN-GOING SHIPS)	74 100	7	2	0.0381
DIESEL-RAIL	74 100	4.5	28.6	0.0381
JET KEROSENE	71 500	0.5	2	0.0441
KEROSENE	71 900	3	0.6	0.037
LIQUEFIED NATURAL GASES	56 100	92	3	N/A
LIQUEFIED PETROLEUM GASES	63 100	62	0.2	0.0473
LUBRICANTS	73 300	3	0.6	0.0402
NATURAL GAS	56 100	92	3	0.048
(PARAFFIN) OTHER KEROSENE	71 900	3	0.6	0.0438
OTHER PETROLEUM PRODUCTS	73 300	3	0.6	0.0402
PARAFFIN WAXES	73 300	3	0.6	0.0402
PETROL	69 300	3.5	5.7	0.0443
REFINERY GAS	57 600	1	0.1	0.0495
RESIDUAL FUEL OIL — (HEAVY FUEL OIL)	77 400	7	2	0.0404
SUB-BITUMINOUS COAL — RAIL	96 100	2	1.5	0.0192
WHITE SPIRIT & SBP	73 300	3	0.6	0.0402

SCHEDULE 1

Table 2

Fugitive Emission Factors

IPCC Code	SOURCE CATEGORY ACTIVITY	CO_2	CH_4	N_2O
1B1	**SOLID FUELS (M^3 /TONNE)**			
1B1a	**COAL MINING AND HANDLING**			
1B1ai	UNDERGROUND COAL MINING	0.077	0.77	
	UNDERGROUND POST-MINING (HANDLING & TRANSPORT)	0.018	0.18	
1B1aii	SURFACE COAL MINING	N/A	0	
	SURFACE POST-MINING (STORAGE AND TRANSPORT)	N/A	0	
1B1c2	Charcoal production (Fuel wood input) ($kgCH_4/TJ$)	N/A	300	
	Charcoal production (Charcoal produced) ($kgCH_4/TJ$)	N/A	1000	
1B2	**OIL AND NATURAL GAS (Gg/ 10^3M^3 TOTAL OIL PRODUCTION)**			
1B2b	**NATURAL GAS**			
1B2b	***FLARING AND VENTING***			
1.B.2.b.ii	WELL DRILLING	0.0001	0.000033	ND
1.B.2.b.ii	WELL TESTING	0.009	0.000051	0.000000068
1.B.2.b.ii	WELL SERVICING	0.0000019	0.00011	ND
1B2b	***GAS PRODUCTION*** **(Gg/ 10^6M^3 TOTAL OIL PRODUCTION)**			
1.B.2.b.iii.2	FUGITIVES	1.40E-05 to 8.20E-05	3.80E-04 to 2.30E-03	N/A
1.B.2.b.ii	FLARING	0.0012	0.00000076	0.000000021
	GAS PROCESSING **(Gg/ 10^6M^3 RAW GAS FEED)**			
1.B.2.b.iii.3	SWEET GAS PLANTS—FUGITIVES	1.50E-04 to 3.20E-04	4.80E-04 to 1.03E-03	N/A
1.B.2.b.ii	SWEET GAS PLANTS—FLARING	0.0018	0.0000012	0.000000025
1.B.2.b.iii.3	SOUR GAS PLANTS—FUGITIVES	0.0000079	0.000097	N/A
1.B.2.b.ii	SOUR GAS PLANTS—FLARING	0.0036	0.0000024	0.000000054
1.B.2.b.i	SOUR GAS PLANTS —RAW CO_2 VENTING	0.063	N/A	N/A
1.B.2.b.iii.3	DEEP CUT EXTRACTION—FUGITIVES	0.0000016	0.000011	N/A
1.B.2.b.ii	DEEP CUT EXTRACTION—FLARING	0.00011	0.000000072	0.000000012
1.B.2.b.iii.3	DEFAULT—FUGITIVES	1.20E-05 to 3.20E-04	1.50E-04 to 1.03E-03	N/A
1.B.2.b.ii	DEFAULT—FLARING	0.003	0.000002	0.000000033
1.B.2.b.i	DEFAULT—RAW CO_2 VENTING	0.04	N/A	N/A
1B2b	***GAS TRANSMISSION & STORAGE*** **(Gg-CO_2/year/km**			
1.B.2.b.iii.4	TRANSMISSION—FUGITIVES	0.000016	0.0025	N/A
1.B.2.b.i	TRANSMISSION—VENTING	0.0000085	0.0010	N/A
1.B.2.b.iii.4	STORAGE (Gg-CO_2/year/M^3)		2.32E-09	ND
1B2b	***GAS DISTRIBUTION*** **(Gg/ 10^6M^3 OF UTILITY SALES)**			

IPCC Code	SOURCE CATEGORY ACTIVITY	CO_2	CH_4	N_2O
1.B.2.b.iii.5	ALL	0.000051	0.0011	ND
1B2b	***NATURAL GAS LIQUIDS TRANSPORT*** **(Gg/ 10^3M^3 CONDENSATE AND PENTANES PLUS)**			
1.B.2.a.iii.3	CONDENSATE	0.0000072	0.00011	
1.B.2.a.iii.3	LIQUEFIED PETROLEUM GAS **(Gg/ 10^3M^3 LPG)**	0.00043	N/A	2.2 0E-09
1.B.2.a.iii.3	LIQUEFIED NATURAL GAS **(Gg/ 10^6M^3 MARKETABLE GAS)**	ND	ND	ND
1B2a	**OIL**			
1B2a	***OIL PRODUCTION*** **(Gg/ 10^3M^3 CONVENTIONAL OIL PRODUCTION)**			
1.B.2.a.iii.2	CONVENTIONAL OIL—FUGITIVES (ONSHORE)	1.10E-07 to 2.60E-04	1.50E-06 to 3.60E-03	N/A
1.B.2.a.iii.2	CONVENTIONAL OIL—FUGITIVES (OFFSHORE)	0.000000043	0.00000059	N/A
1.B.2.a.i	CONVENTIONAL OIL—VENTING	0.000095	0.00072	N/A
1.B.2.a.ii	CONVENTIONAL OIL—FLARING	0.041	0.000025	0.00000064
1B2a	***OIL PRODUCTION*** **(Gg/ 10^3M^3 HEAVY OIL PRODUCTION)**			
1.B.2.a.iii.2	HEAVY OIL/COLD BITUMEN—FUGITIVES	0.00054	0.0079	N/A
1.B.2.a.i	HEAVY OIL/COLD BITUMEN—VENTING	0.0053	0.017	N/A
1.B.2.a.ii	HEAVY OIL/COLD BITUMEN—FLARING	0.022	0.00014	0.00000046
1B2a	***OIL PRODUCTION*** **(Gg/ 10^3M^3 THERMAL BITUMEN PRODUCTION)**			
1.B.2.a.iii.2	THERMAL OIL PRODUCTION—FUGITIVES	0.000029	0.00018	N/A
1.B.2.a.i	THERMAL OIL PRODUCTION—VENTING	0.00022	0.0035	N/A
1.B.2.a.ii	THERMAL OIL PRODUCTION—FLARING	0.027	0.000016	0.00000024
1B2a	***OIL PRODUCTION*** **(Gg/ 10^3M^3 SYNTHETIC CRUDE PRODUCTION FROM OILSANDS)**			
1.B.2.a.iii.2	SYNTHETIC CRUDE (FROM OILSANDS)	ND	0.0023	ND
1.B.2.a.iii.2	SYNTHETIC CRUDE (OIL SHALE)	ND	ND	ND
1B2a	***OIL PRODUCTION*** **(Gg/ 10^3M^3 TOTAL OIL PRODUCTION)**			
1.B.2.a.iii.2	DEFAULT TOTAL—FUGITIVES	0.00028	0.0022	N/A
1.B.2.a.i	DEFAULT TOTAL—VENTING	0.0018	0.0087	N/A
1.B.2.a.ii	DEFAULT TOTAL—FLARING	0.034	0.000021	0.00000054
1B2a	***OIL UPGRADING*** **(Gg/ 10^3M^3 OIL UPGRADED)**			
1.B.2.a.iii.2	ALL	ND	ND	ND
1B2a	***OIL TRANSPORT*** **(Gg/ 10^3M^3 OIL TRANSPORTED BY PIPELINE)**			
1.B.2.a.iii.3	PIPELINES	0.00000049	0.0000054	N/A
1B2a	***OIL TRANSPORT*** **(Gg/ 10^3M^3 OIL TRANSPORTED BY TANKER TRUCK)**			

IPCC Code	SOURCE CATEGORY ACTIVITY	CO_2	CH_4	N_2O
1.B.2.a.i	TANKER TRUCKS AND RAIL CARS—VENTING	0.0000023	0.000025	N/A
	OIL TRANSPORT **(Gg/ 10^3M^3 OIL TRANSPORTED BY TANKER SHIPS)**			
1.B.2.a.i	LOADING OFF-SHORE PRODUCTION ON TANKER SHIPS—VENTING	ND	ND	ND
1B2a	***OIL REFINING*** **(Gg/ 10^3M^3 OIL REFINED)**			
1.B.2.a.iii.4	ALL		2.60E-06 to 4.10E-05	ND

Table 3

INDUSTRIAL PROCESSES AND PRODUCT USE (IPPU) Emission Factors

IPCC Code	SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	TONNE CO_2/ tonne product	TONNE CH_4/ tonne product	TONNE N_2O/ tonne product	TONNE C_2F_6/ tonne product	TONNE CF_4/ tonne product	TONNE SF_6/ tonne product
2A1	***CEMENT PRODUCTION (PER TONNE OF CLINKER)***						
	CEMENT	0.52					
2A2	***LIME PRODUCTION (PER TONNE OF LIME)***						
	QUICKLIME/HIGH CALCIUM LIME	0.75					
	DOLOMITIC LIME	0.77					
	HYDRATED LIME	0.59					
2A3	***GLASS PRODUCTION (PER TONNE GLASS)***						
	GLASS PRODUCTION	0.2					
2A4	***Other Process Uses of Carbonates***						
2A4a	***CERAMICS (PER TONNE CARBONATE)***						
	CALCITE/ARAGONITE ($CaCO_3$)	0.43971					
	MAGNESITE ($MgCO_3$)	0.52197					
	DOLOMITE ($CaMg(CO_3)_2$))	0.47732					
	SIDERITE ($FeCO_3$)	0.37987					
	ANKERITE ($Ca(Fe,Mg,Mn)(CO_3)_2$))	0.40822 to 0.47572					
	RHODOCHROSITE ($MnCO_3$)	0.38286					
	SODIUM CARBONATE/SODA ASH (Na_2CO_3)	0.41492					
2A4b	***OTHER USES OF SODA ASH (PER TONNE CARBONATE)***						
	CALCITE/ARAGONITE ($CaCO_3$)	0.43971					
	MAGNESITE ($MgCO_3$)	0.52197					
	DOLOMITE ($CaMg(CO_3)_2$))	0.47732					
	SIDERITE ($FeCO_3$)	0.37987					
	ANKERITE ($Ca(Fe,Mg,Mn)(CO_3)_2$))	0.40822 to 0.47572					
	RHODOCHROSITE ($MnCO_3$)	0.38286					
	SODIUM CARBONATE/SODA ASH (Na_2CO_3)	0.41492					
2A4c	***NON METALLURGICAL MAGNESIA PRODUCTION (PER TONNE CARBONATE)***						
	CALCITE/ARAGONITE ($CaCO_3$)	0.43971					
	MAGNESITE ($MgCO_3$)	0.52197					
	DOLOMITE ($CaMg(CO_3)_2$))	0.47732					
	SIDERITE ($FeCO_3$)	0.37987					
	ANKERITE ($Ca(Fe,Mg,Mn)(CO_3)_2$))	0.40822 to 0.47572					

IPCC Code	SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	TONNE CO_2/ tonne product	TONNE CH_4/ tonne product	TONNE N_2O/ tonne product	TONNE C_2F_6/ tonne product	TONNE CF_4/ tonne product	TONNE SF_6/ tonne product
	RHODOCHROSITE ($MnCO_3$)	0.38286					
	SODIUM CARBONATE/SODA ASH (Na_2CO_3)	0.41492					
2A5	***OTHER (PER TONNE CARBONATE)***						
	CALCITE/ARAGONITE ($CaCO_3$)	0.43971					
	MAGNESITE ($MgCO_3$)	0.52197					
	DOLOMITE ($CaMg(CO_3)_2$))	0.47732					
	SIDERITE ($FeCO_3$)	0.37987					
	ANKERITE ($Ca(Fe,Mg,Mn)(CO_3)_2$))	0.40822 to 0.47572					
	RHODOCHROSITE ($MnCO_3$)	0.38286					
	SODIUM CARBONATE/SODA ASH (Na_2CO_3)	0.41492					
2B1	***AMMONIA PRODUCTION (PER TONNE NH3)***						
	MODERN PLANTS-CONVENTIONAL REFORMING (NATURAL GAS)	1.694					
	EXCESS AIR REFORMING (NATURAL GAS)	1.666					
	AUTOTHERMAL REFORMING (NATURAL GAS)	1.694					
	PARTIAL OXIDATION	2.772					
	AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN & OLD)	2.104					
	AVERAGE VALUE (PARTIAL OXIDATION)	3.273					
2B2	***NITRIC ACID PRODUCTION (PER TONNE NITRIC ACID)***						
	PLANTS WITH NSCR (ALL PROCESSES)			0.002			
	PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 DESTRUCTION)			0.0025			
	ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS)			0.005			
	MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE)			0.007			
	HIGH PRESSURE PLANTS (HIGH PRESSURE)			0.009			
2B3	***ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID UNCONTROLLED)***						
	NITRIC ACID OXIDATION (ADIPIC ACID)			0.3			
2B4	***CAPROLACTAM, GLYOXAL AND GLYOXYLIC ACID PRODUCTION (PER TONNE PRODUCED)***						
	CAPROLACTAM PRODUCTION (RASCHIG)			0.009			

IPCC Code	SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	TONNE CO_2/ tonne product	TONNE CH_4/ tonne product	TONNE N_2O/ tonne product	TONNE C_2F_6/ tonne product	TONNE CF_4/ tonne product	TONNE SF_6/ tonne product
	GLYOXAL PRODUCTION			0.1			
	GLYOXYLIC ACID PRODUCTION			0.02			
2B5	***CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED)***						
	SILICON CARBIDE PRODUCTION	2.3	0.0102				
	PETROLEUM COKE USE	1.7					
2B5	***CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED)***						
	SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED)	2.62	0.0116				
	PETROLEUM COKE USE	1.09					
	USE OF PRODUCT	1.1					
2B6	***TITANIUM DIOXIDE PRODUCTION (PER TONNE PRODUCT)***						
	TITANIUM SLAG	NOT AVAILABL E					
	SYNTHETIC RUTILE	1.43					
	RUTILE TITANIUM DIOXIDE (CHLORIDE ROUTE)	1.34					
2B7	***SODA ASH PRODUCTION (PER TONNE OF SODA ASH OR TRONA)***						
	NATURAL SODA ASH OUTPUT	0.138					
	NATURAL SODA ASH (TRONA USED)	0.097					
2B8	PETROCHEMICAL AND CARBON BLACK PRODUCTION						
2B8a	***METHANOL PRODUCTION (PER TONNE METHANOL PRODUCED)***						
	CONVENTIONAL STEAM REFORMING WITHOUT PRIMARY REFORMER (NATURAL GAS FEEDSTOCK)	0.67	0.0023				
	CONVENTIONAL STEAM REFORMING WITH PRIMARY REFORMER (NATURAL GAS FEEDSTOCK)	0.497	0.0023				
	CONVENTIONAL STEAM REFORMING LURGI CONVENTIONAL PROCESS (NATURAL GAS FEEDSTOCK)	0.385	0.0023				
	CONVENTIONAL STEAM REFORMING LURGI CONVENTIONAL PROCESS (NATURAL GAS+CO_2 FEEDSTOCK)	0.267	0.0023				

IPCC Code	SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	TONNE CO_2/ tonne product	TONNE CH_4/ tonne product	TONNE N_2O/ tonne product	TONNE C_2F_6/ tonne product	TONNE CF_4/ tonne product	TONNE SF_6/ tonne product
	CONVENTIONAL STEAM REFORMING LURGI LOW PRESSURE PROCESS (NATURAL GAS FEEDSTOCK)	0.267	0.0023				
	CONVENTIONAL STEAM REFORMING LURGI COMBINED PROCESS (NATURAL GAS FEEDSTOCK)	0.396	0.0023				
	CONVENTIONAL STEAM REFORMING LURGI MEGA METHANOL PROCESS (NATURAL GAS FEEDSTOCK)	0.31	0.0023				
	PARTIAL OXIDATION PROCESS (OIL FEEDSTOCK)	1.376	0.0023				
	PARTIAL OXIDATION PROCESS (COAL FEEDSTOCK)	5.285	0.0023				
	PARTIAL OXIDATION PROCESS (LIGNITE FEEDSTOCK)	5.02	0.0023				
	CONVENTIONAL STEAM REFORMING WITH INTEGRATED AMMONIA PRODUCTION (NATURAL GAS FEEDSTOCK)	1.02	0.0023				
2B8b	***STEAM CRACKING ETHYLENE PRODUCTION (PER TONNE ETHYLENE PRODUCED)***						
	ETHYLENE (TOTAL PROCESS & ENERGY FEEDSTOCK USE)—NAPTHA	1.73	0.003				
	ETHYLENE (TOTAL PROCESS & ENERGY FEEDSTOCK USE)—GAS OIL	2.29	0.003				
	ETHYLENE (TOTAL PROCESS & ENERGY FEEDSTOCK USE)—ETHANE	0.95	0.006				
	ETHYLENE (TOTAL PROCESS & ENERGY FEEDSTOCK USE)—PROPANE	1.04	0.003				
	ETHYLENE (TOTAL PROCESS & ENERGY FEEDSTOCK USE)—BUTANE	1.07	0.003				
	ETHYLENE (TOTAL PROCESS & ENERGY FEEDSTOCK USE)—OTHER	1.73	0.003				
	ETHYLENE (PROCESS FEEDSTOCK USE)—NAPHTHA	1.73	0.003				
	ETHYLENE (PROCESS FEEDSTOCK USE)—GAS OIL	2.17	0.003				
	ETHYLENE (PROCESS FEEDSTOCK USE)—ETHANE	0.76	0.006				
	ETHYLENE (PROCESS FEEDSTOCK USE)—PROPANE	1.04	0.003				
	ETHYLENE (PROCESS FEEDSTOCK USE)—BUTANE	1.07	0.003				
	ETHYLENE (PROCESS FEEDSTOCK USE)—OTHER	1.73	0.003				

IPCC Code	SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	TONNE CO_2/ tonne product	TONNE CH_4/ tonne product	TONNE N_2O/ tonne product	TONNE C_2F_6/ tonne product	TONNE CF_4/ tonne product	TONNE SF_6/ tonne product
	ETHYLENE (SUPPLEMENTAL FUEL-ENERGY FEEDSTOCK) USE—GAS OIL	0.12	0.003				
	ETHYLENE (SUPPLEMENTAL FUEL-ENERGY FEEDSTOCK) USE—ETHANE	0.19	0.006				
2B8c	***ETHYLENE DICHLORIDE AND VINYL CHLORIDE MONOMER (PER TONNE EDC PRODUCED OR TONNE VCM PRODUCT PRODUCED)***						
	DIRECT CHORINATION PROCESS (EDC)	0.191	0.0000226				
	OXYCHLORINATION PROCESS (EDC)	0.202	0.0000226				
	BALANCED PROCESS (DEFAULT)—EDC	0.196	0.0000226				
2B8c	***ETHYLENE DICHLORIDE AND VINYL CHLORIDE MONOMER (PER TONNE VCM PRODUCED OR TONNE VCM PRODUCT PRODUCED)***						
	DIRECT CHORINATION—PROCESS (VCM)	0.286	0.0000226				
	OXYCHLORINATION PROCESS (VCM)	0.302	0.0000226				
	BALANCED PROCESS (DEFAULT) -VCM	0.294	0.0000226				
2B8d	***ETHYLENE OXIDE (PER TONNE ETHYLENE OXIDE PRODUCED)***						
	AIR PROCESS (DEFAULT)—CATALYST DEFAULT (70)	0.863	0.00179				
	AIR PROCESS (DEFAULT)—CATALYST (75)	0.663	0.00179				
	AIR PROCESS (DEFAULT)—CATALYST (80)	0.5	0.00179				
	OXYGEN PROCESS (DEFAULT)—CATALYST DEFAULT (75)	0.663	0.00179				
	OXYGEN PROCESS—CATALYST (80)	0.5	0.00179				
	OXYGEN PROCESS—CATALYST (85)	0.35	0.00179				
	ALL ETHYLENE OXIDE PROCESSES—THERMAL TREATMENT	N/A	0.00079				
2B8e	***ACRYLONITRILE (PER TONNE ACRYLONITRILE PRODUCED)***						
	DIRECT AMMOXIDATION WITH SECONDARY PRODUCTS BURNED FOR ENERGY RECOVERY OR FLARED (DEFAULT)	1	0.00018				
	DIRECT AMMOXIDATION WITH ACETONITRILE BURNED FOR ENERGY RECOVERY OR FLARED	0.83	0.00018				

IPCC Code	SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	TONNE CO_2/ tonne product	TONNE CH_4/ tonne product	TONNE N_2O/ tonne product	TONNE C_2F_6/ tonne product	TONNE CF_4/ tonne product	TONNE SF_6/ tonne product
	DIRECT AMMOXIDATION WITH ACETONITRILE & HYDROGEN CYANIDE RECOVERED AS PRODUCT	0.79	0.00018				
2B8f	***CARBON BLACK PRODUCTION (PER TONNE CARBON BLACK PRODUCED)***						
	FURNACE BLACK PROCESS (DEFAULT)—Primary Feedstock	1.96	0.00006				
	THERMAL BLACK PROCESS—PRIMARY FEEDSTOCK	4.59	0.00006				
	ACETYLENE BLACK PROCESS—PRIMARY FEEDSTOCK	0.12	0.00006				
	FURNACE BLACK PROCESS (DEFAULT)—SECONDARY FEEDSTOCK	0.66	0.00006				
	THERMAL BLACK PROCESS—SECONDARY FEEDSTOCK	0.66	0.00006				
	ACETYLENE BLACK PROCESS—SECONDARY FEEDSTOCK	0.66	0.00006				
	FURNACE BLACK PROCESS (DEFAULT)—TOTAL FEEDSTOCK	2.62	0.00006				
	THERMAL BLACK PROCESS—TOTAL FEEDSTOCK	5.25	0.00 006				
	ACETYLENE BLACK PROCESS—TOTAL FEEDSTOCK	0.78	0.00006				
	ALL CARBON BLACK PROCESSES (NO THERMAL TREATMENT)	N/A	0.0287				
2C1	***IRON AND STEEL PRODUCTION (PER TONNE PRODUCT PRODUCED)***						
	SINTER PRODUCTION	0.2	0.00007				
	COKE OVEN	0.56	0.0000001				
	PIG IRON PRODUCTION	1.35					
	DIRECT REDUCED IRON (DRI) PRODUCTION	0.7	0.001/TJ (NG)				
	PELLET PRODUCTION	0.03					
	BASIC OXYGEN FURNACE	1.46					
	ELECTRIC ARC FURNACE	0.08					
	OPEN HEARTH FURNACE	1.72					
	GLOBAL AVERAGE	1.06					
2C2	***FERROALLOYS PRODUCTION (PER TONNE PRODUCTION)***						
	FERROSILICON (45%) SI	2.5					
	FERROSILICON (65%) SI	3.6	0.001				
	FERROSILICON (75%) SI	4	0.001				
	FERROSILICON (90%) SI	4.8	0.0011				
	FERROMANGANESE (7% C)	1.3					

IPCC Code	SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	TONNE CO_2/ tonne product	TONNE CH_4/ tonne product	TONNE N_2O/ tonne product	TONNE C_2F_6/ tonne product	TONNE CF_4/ tonne product	TONNE SF_6/ tonne product
	FERROMANGANESE (1% C)	1.5					
	SILICOMANGANESE	1.4					
	SILICON METAL	5	0.0012				
	FERROCHROMIUM (STAND ALONE)	1.3					
	FERROCHROMIUM (WITH SINTER PLANT)	1.6					
2C3	***ALUMINIUM PRODUCTION (PER TONNE ALUMINIUM PRODUCED)***						
	PREBAKE	1.6					
	SODERBERG	1.7					
	CWPB				0.00004	0.0004	
	SWPB				0.0004	0.0016	
	VSS				0.00004	0.0008	
	HSS				0.00003	0.0004	
2C4	***MAGNESIUM PRODUCTION (PER TONNE MAGNESIUM PRODUCED)***						
	DOLOMITE	5.13					0.001
	MAGNESITE	2.83					0.001
2C5	***LEAD PRODUCTION (PER TONNE PRODUCT)***						
	IMPERIAL SMELT FURNACE (ISF) PRODUCTION	0.59					
	DIRECT SMELTING PRODUCTION	0.25					
	TREATMENT OF SECONDARY RAW MATERIALS	0.2					
	DEFAULT EF	0.52					
2C6	***ZINC PRODUCTION (PER TONNE PRODUCT)***						
	WAELZ KILN	3.66					
	PYROMETALLURGICAL	0.43					
	DEFAULT EF	1.72					

SCHEDULE 2

IPCC Code	Activity/Sector	Threshold	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax-free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Performance allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
1	**ENERGY**									
1A	**Fuel Combustion Activities**									
1A1	**Energy Industries (including heat and electricity recovery from Waste)**									
1A1a	Main Activity Electricity and Heat Production (including Combined Heat and Power Plants)	10 MW(th)	60	0	0	10	5	5	10	90
1A1b	Petroleum Refining	10 MW(th)	60	0	0	10	5	5	10	90
1A1c	Manufacture of Solid Fuels and Other Energy Industries	10 MW(th)	60	0	0	10	5	5	10	90
1A2	**Manufacturing Industries and Construction (including heat and electricity recovery from Waste)**		60	0	0	10	5	5	10	90
1A2a	Iron and Steel	10 MW(th)	60	0	0	10	5	5	10	90
1A2b	Non-Ferrous Metals	10 MW(th)	60	0	0	10	5	5	10	90
1A2c	Chemicals	10 MW(th)	60	0	0	10	5	5	10	90
1A2d	Pulp, Paper and Print	10 MW(th)	60	0	0	10	5	5	10	90
1A2e	Food Processing, Beverages and Tobacco	10 MW(th)	60	0	0	10	5	5	10	90
1A2f	Non-Metallic Minerals	10 MW(th)	60	0	0	10	5	5	10	90
1A2g	Transport Equipment	10 MW(th)	60	0	0	10	5	5	10	90
1A2h	Machinery	10 MW(th)	60	0	0	10	5	5	10	90
1A2i	Mining and Quarrying	10 MW(th)	60	0	0	10	5	5	10	90
1A2j	Wood and Wood Products	10 MW(th)	60	0	0	10	5	5	10	90
1A2k	Construction	10 MW(th)	60	0	0	10	5	5	10	90
1A2l	Textile and Leather	10 MW(th)	60	0	0	10	5	5	10	90
1A2m	Brick manufacturing:	4 million bricks a month	60	0	0	10	5	5	10	90
1A3	**Transport**									
1A3a	Domestic Aviation	100 000 litres/year	75	0	0	0	5	5	10	95
1A3b	Road Transportation	N/A	75	0	0	0	0	5	10	90
1A3c	Railways	100 000 litres/year	75	0	0	0	0	5	10	90
1A3d	Water-borne Navigation	100 000 litres/year	75	0	0	0	0	5	10	90
1A3e	Other Transportation	N/A	75	0	0	0	0	5	10	90
1A4	**Other Sectors (including heat and electricity recovery from Waste)**									
1A4a	Commercial/Institutional	10 MW(th)	60	0	0	10	5	5	10	90
1A4b	Residential	10 MW(th)	100	0	0	0	0	0	0	100
1A4c	Agriculture/Forestry/Fishing/Fish Farms	10 MW(th)	60	0	0	10	5	5	10	90

IPCC Code	Activity/Sector	Threshold	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax-free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Performance allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
1A5	**Non-Specified (including heat and electricity recovery from Waste)**									
1A5a	Stationary	10 MW(th)	60	0	0	10	5	5	10	90
1A5b	Mobile	N/A	60	0	0	10	5	5	10	90
1A5c	Multilateral Operations	N/A	60	0	0	10	5	5	10	90
1B	**Fugitive Emissions from Fuels**									
1B1	**Solid Fuels**									
1B1a	Coal Mining and Handling	None	60	0	10	10	5	5	5	95
1B1ai	Underground mines including flaring of drained methane (excluding abandoned mines)	none	60	0	10	10	5	5	5	95
1B1aii	Surface mines	none	60	0	10	10	5	5	5	95
1B1b	Uncontrolled Combustion, and Burning Coal Dumps	N/A	100	0	0	0	0	0	0	100
1B1c	Solid Fuel Transformation									
1B1c1	Coke production processes	none	60	0	10	10	5	5	5	95
1B1c2	Charcoal production processes	none	60	0	10	10	5	5	5	95
1B1c3	Any other solid fuel transformation involving fossil and organic carbon based fuels (e.g. biofuel productions)	none	60	0	10	10	5	5	5	95
1B2	**Oil and Natural Gas**									
1B2a	Oil	none	60	0	10	10	5	5	5	95
1B2ai	Venting	none	60	0	10	10	5	5	5	95
1B2aii	Flaring	none	60	0	10	10	5	5	5	95
1B2aiii	All other	none	60	0	10	10	5	5	5	95
1B2b	Natural Gas	none	60	0	10	10	5	5	5	95
1B2bi	Venting	none	60	0	10	10	5	5	5	95
1B2bii	Flaring	none	60	0	10	10	5	5	5	95
1B2biii	All other	none	60	0	10	10	5	5	5	95
1B3	**Other Emissions from Energy Production**									
1B3a	Coal-to-liquids processes	none	60	0	10	10	5	5	5	95
1B3b	Gas-to-liquids processes	none	60	0	10	10	5	5	5	95
1B3c	Gas-to-chemicals processes	none	60	0	10	10	5	5	5	95
1C	**Carbon Dioxide Transport and Storage**									
1C1	**Transport of CO_2**	none	60	0	10	10	5	5	5	95
1C1a	Pipelines	10 000 tons CO_2/year	60	0	10	10	5	5	5	95

IPCC Code	Activity/Sector	Threshold	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax-free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Performance allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
1C1b	Ships	10 000 tons CO_2/year	60	0	10	10	5	5	5	95
1C1c	Other (please specify)	10 000 tons CO_2/year	60	0	10	10	5	5	5	95
1C2	**Injection and Storage**									
1C2a	Injection	10 000 tons CO_2/year	60	0	10	10	5	5	5	95
1C2b	Storage	10 000 tons CO_2/year	60	0	10	10	5	5	5	95
1C3	Other	none	60	0	10	10	5	5	5	95
2	**INDUSTRIAL PROCESSES AND PRODUCT USE**									
2A	**Mineral Industry**									
2A1	Cement Production	none	0	70	0	10	5	5	5	95
2A2	Lime Production	none	0	70	0	10	5	5	5	95
2A3	Glass Production	none	0	70	0	10	5	5	5	95
2A4	**Other Process Uses of Carbonates**		60	0	0	10	5	5	10	90
2A4a	Ceramics	none	60	0	0	10	5	5	10	90
2A4b	Other Uses of Soda Ash	none	60	0	0	10	5	5	10	90
2A4c	Non Metallurgical Magnesia Production	none	60	0	0	10	5	5	10	90
2A4d	Other (please specify)	100 tons/ year	60	0	0	10	5	5	10	90
2A5	**Other (please specify)**	N/A	60	0	0	10	5	5	10	90
2B	**Chemical Industry**									
2B1	Ammonia Production	none	0	70	0	10	5	5	5	95
2B2	Nitric Acid Production	none	0	70	0	10	5	5	5	95
2B3	Adipic Acid Production	none	0	70	0	10	5	5	5	95
2B4	Caprolactam, Glyoxal and Glyoxylic Acid Production	none	0	70	0	10	5	5	5	95
2B5	Carbide Production	none	0	70	0	10	5	5	5	95
2B6	Titanium Dioxide Production	none	0	70	0	10	5	5	5	95
2B7	Soda Ash Production	none	0	70	0	10	5	5	5	95
2B8	**Petrochemical and Carbon Black Production**									
2B8a	Methanol	none	0	70	0	10	5	5	5	95
2B8b	Ethylene	none	0	70	0	10	5	5	5	95
2B8c	Ethylene Dichloride and Vinyl Chloride Monomer	none	0	70	0	10	5	5	5	95
2B8d	Ethylene Oxide	none	0	70	0	10	5	5	5	95
2B8e	Acrylonitrile	none	0	70	0	10	5	5	5	95
2B8f	Carbon Black	none	0	70	0	10	5	5	5	95
2B8g	Hydrogen Production	none	0	70	0	10	5	5	5	95
2B9	**Fluorochemical Production**									

IPCC Code	Activity/Sector	Threshold	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax-free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Performance allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
2B9a	By-product Emissions	none	0	70	0	10	5	5	5	95
2B9b	Fugitive Emissions	none	0	70	0	10	5	5	5	95
2B10	Other (Please specify)	N/A	0	70	0	10	5	5	5	95
2C	**Metal Industry**									
2C1	Iron and Steel Production	none	0	70	0	10	5	5	5	95
2C2	Ferroalloys Production	none	0	70	0	10	5	5	5	95
2C3	Aluminium Production	none	0	60	0	10	5	5	10	90
2C4	Magnesium Production	none	0	60	0	10	5	5	10	90
2C5	Lead Production	none	0	60	0	10	5	5	10	90
2C6	Zinc Production	none	0	60	0	10	5	5	10	90
2C7	Other (please specify)	N/A	0	60	0	10	5	5	10	90
2D	**Non-Energy Products from Fuels and Solvent Use**									
2D1	Lubricant Use	N/A	0	60	0	10	5	5	10	90
2D2	Paraffin Wax Use	N/A	0	60	0	10	5	5	10	90
2D3	Solvent Use	N/A	0	60	0	10	5	5	10	90
2D4	Other (please specify)	N/A	0	60	0	10	5	5	10	90
2E	**Electronics Industry**									
2E.1	Integrated Circuit or Semiconductor	N/A	0	60	0	10	5	5	10	90
2E.2	TFT Flat Panel Display	N/A	0	60	0	10	5	5	10	90
2E.3	Photovoltaics	N/A	0	60	0	10	5	5	10	90
2E.4	Heat Transfer Fluid	N/A	0	60	0	10	5	5	10	90
2E.5	Other (please specify)	N/A	0	60	0	10	5	5	10	90
2F	**Product Uses as Substitutes for Ozone Depleting Substances**									
2F1	**Refrigeration and Air Conditioning**									
2F1a	Refrigeration and Stationary Air Conditioning	N/A	0	60	0	10	5	5	10	90
2F1b	Mobile Air Conditioning	N/A	0	60	0	10	5	5	10	90
2F2	Foam Blowing Agents	N/A	0	60	0	10	5	5	10	90
2F3	Fire Protection	N/A	0	60	0	10	5	5	10	90
2F4	Aerosols	N/A	0	60	0	10	5	5	10	90
2F5	Solvents	N/A	0	60	0	10	5	5	10	90
2F6	**Other Applications (please specify)**	N/A	0	60	0	10	5	5	10	90
2G	**Other Product Manufacture and Use**									
2G1	**Electrical Equipment**									
2G1a	Manufacture of Electrical Equipment	N/A	0	60	0	10	5	5	10	90
2G1b	Use of Electrical Equipment	N/A	0	60	0	10	5	5	10	90
2G1c	Disposal of Electrical Equipment		0	60	0	10	5	5	10	90

IPCC Code	Activity/Sector	Threshold	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax-free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Performance allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
2G2	**SF_6 and PFCs from Other Product Uses**	N/A								
2G2a	Military Applications	N/A	0	60	0	10	5	5	10	90
2G2b	Accelerators	N/A	0	60	0	10	5	5	10	90
2G2c	Other (please specify)	N/A	0	60	0	10	5	5	10	90
2G3	**N_2O from Product Uses**	N/A								
2G3a	Medical Applications	N/A	0	60	0	10	5	5	10	90
2G3b	Propellant for Pressure and Aerosol Products	N/A	0	60	0	10	5	5	10	90
2G3c	Other (Please specify)	N/A	0	60	0	10	5	5	10	90
2G4	**Other (Please specify)**	N/A	0	60	0	10	5	5	10	90
2H	**Other**									
2H1	Pulp and Paper Industry	N/A	0	60	0	10	5	5	10	90
2H2	Food and Beverages Industry	N/A	0	60	0	10	5	5	10	90
2H3	Other (please specify)	N/A	0	60	0	10	5	5	10	90
3	**AGRICULTURE, FORESTRY, AND OTHER LAND USE**									
3A	**Livestock**									
3A1	**Enteric Fermentation**									
3A1a	Cattle	N/A	100	0	0	0	0	0	0	100
3A1b	Buffalo	N/A	100	0	0	0	0	0	0	100
3A1c	Sheep	N/A	100	0	0	0	0	0	0	100
3A1d	Goats	N/A	100	0	0	0	0	0	0	100
3A1e	Camels	N/A	100	0	0	0	0	0	0	100
3A1f	Horses	N/A	100	0	0	0	0	0	0	100
3A1g	Mules and Asses	N/A	100	0	0	0	0	0	0	100
3A1h	Swine	N/A	100	0	0	0	0	0	0	100
3A1j	Other (please specify)	N/A	100	0	0	0	0	0	0	100
3A2	**Manure Management**									
3A2a	Cattle	N/A	100	0	0	0	0	0	0	100
3A2b	Buffalo	N/A	100	0	0	0	0	0	0	100
3A2c	Sheep	N/A	100	0	0	0	0	0	0	100
3A2d	Goats	N/A	100	0	0	0	0	0	0	100
3A2e	Camels	N/A	100	0	0	0	0	0	0	100
3A2f	Horses	N/A	100	0	0	0	0	0	0	100
3A2g	Mules and Asses	N/A	100	0	0	0	0	0	0	100
3A2h	Swine	N/A	100	0	0	0	0	0	0	100
3A2i	Poultry	N/A	100	0	0	0	0	0	0	100
3A2j	Other (please specify)	N/A	100	0	0	0	0	0	0	100
3B	**Land**									
3B1	**Forest Land**									
3B1a	Forest land Remaining Forest Land	100 Hectares of Plantations or Natural forests	100	0	0	0	0	0	0	100

IPCC Code	Activity/Sector	Threshold	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax-free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Performance allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
3B1b	Land Converted to Forest Land	100 Hectares of Plantations or Natural forests	100	0	0	0	0	0	0	100
3B2	**Cropland**									
3B2a	Cropland Remaining Cropland	N/A	100	0	0	0	0	0	0	100
3B2b	Land Converted to Cropland	N/A	100	0	0	0	0	0	0	100
3B3	**Grassland**									
3B3a	Grassland Remaining Grassland	N/A	100	0	0	0	0	0	0	100
3B3b	Land Converted to Grassland	N/A	100	0	0	0	0	0	0	100
3B4	**Wetlands**									
3B4a	Wetlands Remaining Wetlands	N/A	100	0	0	0	0	0	0	100
3B4b	Land Converted to Wetlands	N/A	100	0	0	0	0	0	0	100
3B5	**Settlements**									
3B5a	Settlements Remaining Settlements	N/A	100	0	0	0	0	0	0	100
3B5b	Land Converted to Settlements	N/A	100	0	0	0	0	0	0	100
3B6	**Other Land**									
3B6a	Other Land Remaining Other Land	N/A	100	0	0	0	0	0	0	100
3B6b	Land Converted to Other Land	N/A	100	0	0	0	0	0	0	100
3C	**Aggregate Sources and Non-CO_2 Emissions Sources on Land**									
3C1	**Emissions from Biomass Burning**									
3C1a	Biomass Burning in Forest Lands	N/A	100	0	0	0	0	0	0	100
3C1b	Biomass Burning in Croplands	N/A	100	0	0	0	0	0	0	1 00
3C1c	Biomass Burning in Grasslands	N/A	100	0	0	0	0	0	0	100
3C1d	Biomass Burning in All Other Land	N/A	100	0	0	0	0	0	0	100
3C2	Liming	N/A	100	0	0	0	0	0	0	100
3C3	Urea Application	N/A	100	0	0	0	0	0	0	100
3C4	Direct N_2O Emissions from Managed Soils	N/A	100	0	0	0	0	0	0	100
3C5	Indirect N_2O Emissions from Managed Soils	N/A	100	0	0	0	0	0	0	100
3C6	Indirect N_2O Emissions from Manure Management	N/A	100	0	0	0	0	0	0	100
3C7	Rice Cultivations	N/A	100	0	0	0	0	0	0	100
3C8	Other (please specify)	N/A	100	0	0	0	0	0	0	100
3D	**Other**									

IPCC Code	Activity/Sector	Threshold	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax-free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Performance allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
3D1	Harvested Wood Products	N/A	100	0	0	0	0	0	0	100
3D2	Other (please specify)	N/A	100	0	0	0	0	0	0	100
4	**WASTE**									
4A	**Solid Waste Disposal**									
4A1	Managed Waste Disposal Sites	Receiving 5 tonnes per day or a total capacity of 25000 tonnes	100	0	0	0	0	0	0	100
4A2	Unmanaged Waste Disposal Sites	Receiving 5 tonnes per day or a total capacity of 25000 tonnes	100	0	0	0	0	0	0	100
4A3	Uncategorised Waste Disposal Sites	Receiving 5 tonnes per day or a total capacity of 25000 tonnes	100	0	0	0	0	0	0	100
4B	**Biological Treatment of Solid Waste**	N/A	100	0	0	0	0	0	0	100
4C	**Incineration and Open Burning of Waste**									
4C0	Waste — Pyrolysis	100 kg/hour	100	0	0	0	0	0	0	100
4C1	Waste Incineration	1 tonne per hour	60	0	0	10	5	5	10	90
4C2	Open Burning of Waste	N/A	100	0	0	0	0	0	0	100
4D	**Wastewater Treatment and Discharge**									
4D1	Domestic Wastewater Treatment and Discharge	2 Million litres/day	100	0	0	0	0	0	0	100
4D2	Industrial Wastewater Treatment and Discharge	1000 cubic metres per day	100	0	0	0	0	0	0	100
4E	**Other (please specify)**	N/A								
5	**OTHER**									
5A	**Indirect N_2O Emissions from the Atmospheric Deposition of Nitrogen in NO_X and NH_3**	N/A	60	0	0	10	5	5	10	90
5B	Other (please specify)	N/A	60	0	0	10	5	5	10	90

SCHEDULE 3

(Section 20)

GENERAL EXPLAN/ATORY NOTE:

[ ] Words in bold type in square brackets indicate omissions from existing enactments.

Words underlined with a solid line indicate insertions in existing enactments.

BILL

Amendment of section 1 of Act 91 of 1964, as amended by section 1 of Act 95 of 1965, section 1 of Act 57 of 1966, section 1 of Act 105 of 1969, section 1 of Act 98 of 1970, section 1 of Act 71 of 1975, section 1 of Act 112 of 1977, section 1 of Act 110 of 1979, sections 1 and 15 of Act 98 of 1980, section 1 of Act 89 of 1984, section 1 of Act 84 of 1987, section 32 of Act 60 of 1989, section 51 of Act 68 of 1989, section 1 of Act 59 of 1990, section 1 of Act 19 of 1994, section 34 of Act 34 of 1997, section 57 of Act 30 of 1998, section 46 of Act 53 of 1999, section 58 of Act 30 of 2000, section 60 of Act 59 of 2000, section 113 of Act 60 of 2001, section 131 of Act 45 of 2003, section 66 of Act 32 of 2004, section 85 of Act 31 of 2005, section 7 of Act 21 of 2006, section 10 of Act 9 of 2007, section 4 of Act 36 of 2007, section 22 of Act 61 of 2008 and section 1 of Act 32 of 2014

1. Section 1 of the Customs and Excise Act, 1964, is hereby amended by the insertion in subsection (1) after the definition of ''bulk goods terminal operator'' of the following definition:

'' **'Carbon Tax Act'** means an Act of Parliament that makes provision for a carbon tax;''.

Amendment of section 54A of Act 91 of 1964, as inserted by section 139 of Act 45 of 2003 and renumbered by section 32 of Act 16 of 2004

2. The following section is hereby substituted for section 54A of the Customs and Excise Act, 1964:

''**Imposition of environmental levy**

54A. A levy known as the environmental levy shall be—

(a) leviable on such imported goods and goods manufactured in the Republic as may be specified in any item of Part 3 of Schedule No.1; and

(b) collected and paid in respect of carbon tax imposed in terms of the Carbon Tax Act, 2018.''.

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